



US005387070A

United States Patent [19][11] **Patent Number:** **5,387,070****Roeling**[45] **Date of Patent:** **Feb. 7, 1995****[54] COUPLING SYSTEM FOR MOTORIZED VEHICLES**

5,203,655 4/1993 Persau 410/30

[76] Inventor: **James E. Roeling**, 1924 Thomas St.,
Beloit, Wis. 53511**FOREIGN PATENT DOCUMENTS**

2642378 8/1990 France .

984908A 1/1983 U.S.S.R. .

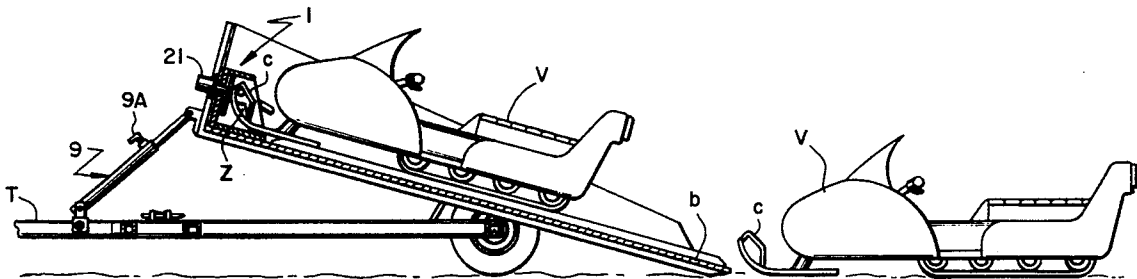
[21] Appl. No.: **79,460****[22] Filed:** **Jun. 18, 1993****[51] Int. Cl.⁶ B60P 7/06; B60P 1/28****[52] U.S. Cl. 414/483; 410/3;**
280/508; 414/485**[58] Field of Search 414/471, 477, 482, 483,**
414/484, 485, 401, 584, 786; 410/2, 3, 4, 7, 10,
11, 19, 30; 280/508, 509**[56] References Cited****U.S. PATENT DOCUMENTS**

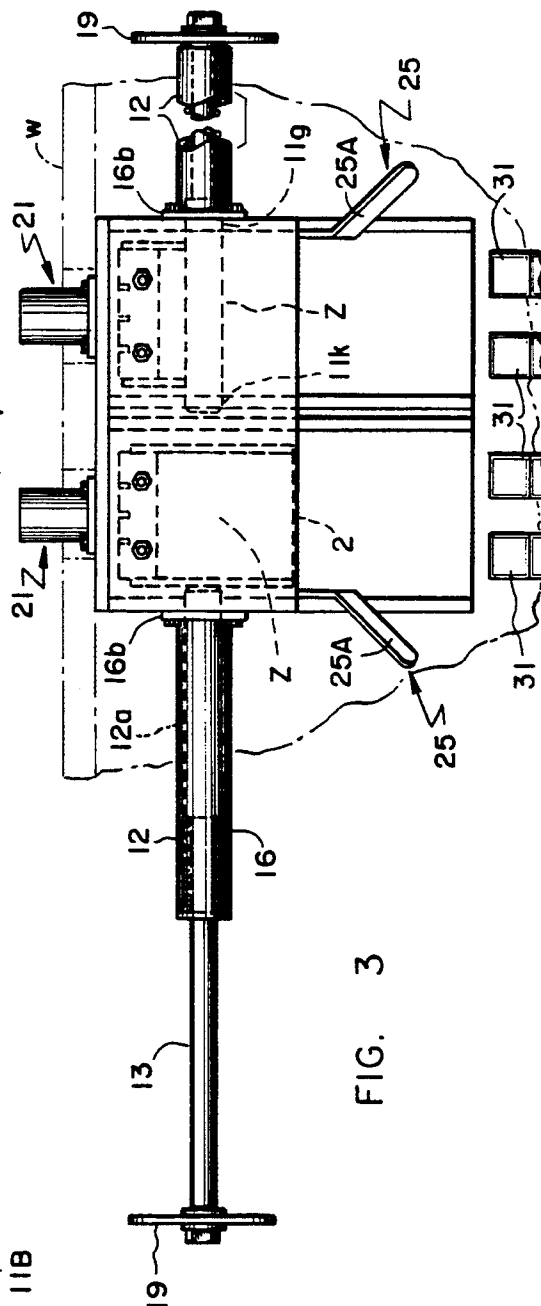
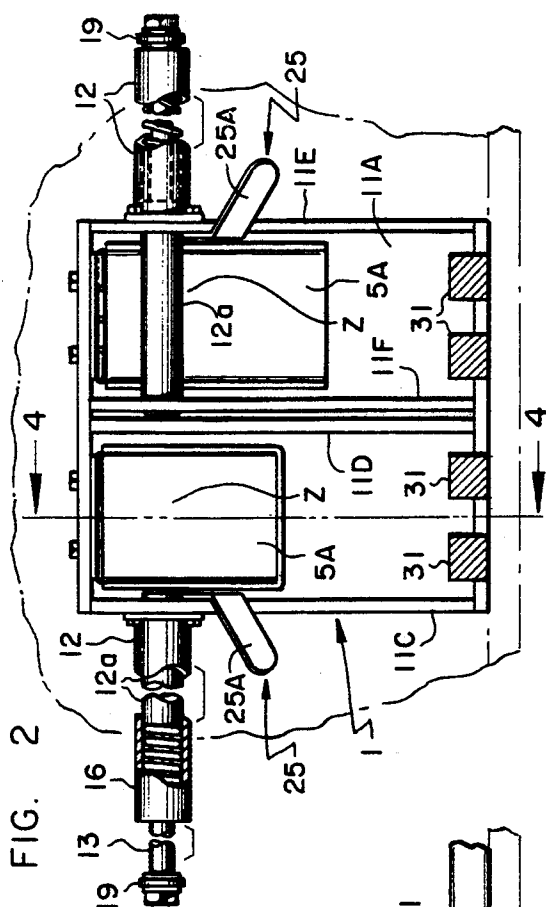
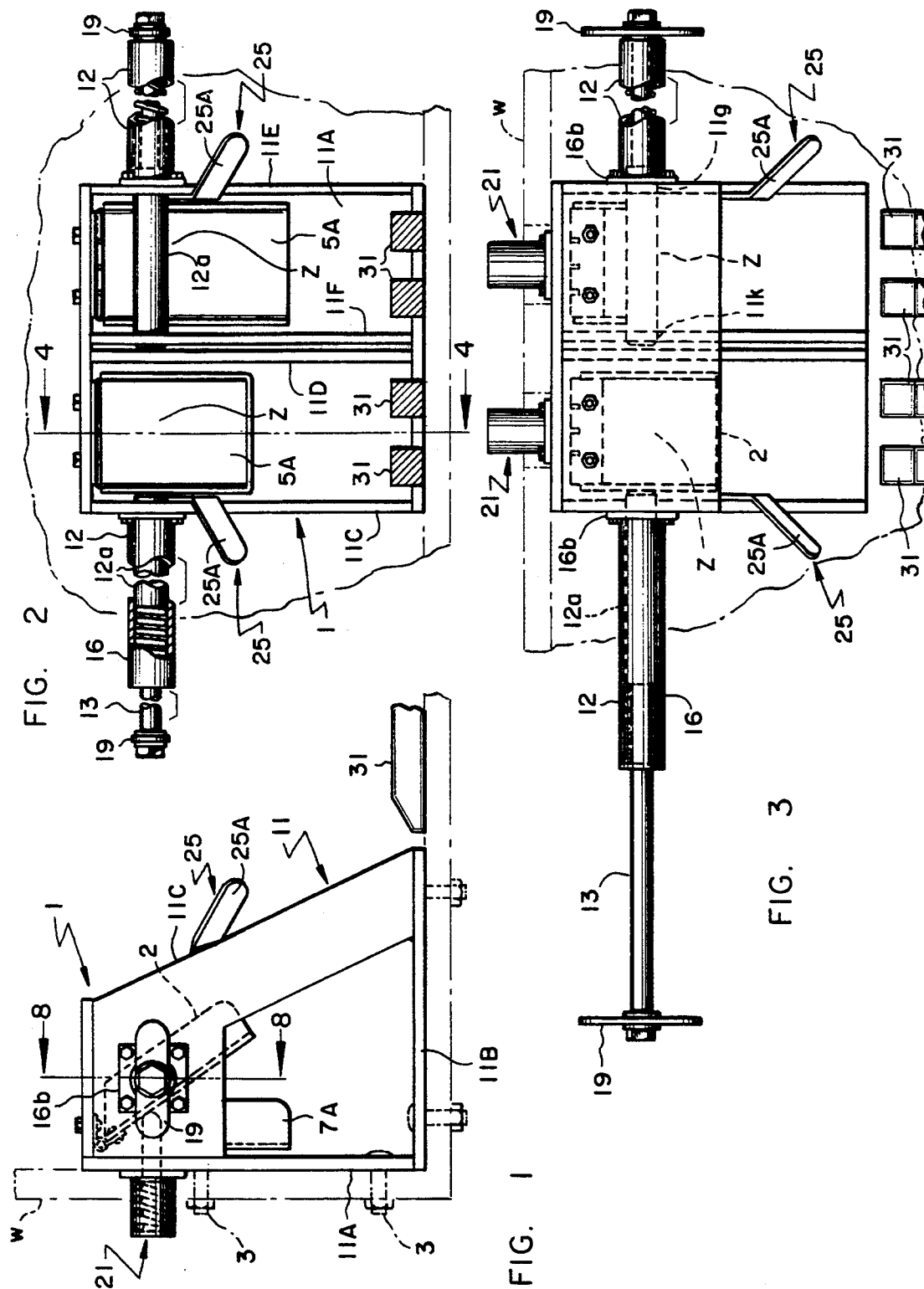
1,835,840	12/1931	Barclay .	
3,672,523	6/1972	Albert	410/3
3,730,552	5/1973	Clark	280/179
3,786,950	1/1974	Zemien	414/483
4,083,594	4/1978	Tullock	296/1
4,168,932	9/1979	Clark	414/483
4,475,762	10/1984	DeLong et al.	296/65
5,005,846	4/1991	Taylor	280/30
5,044,845	9/1991	Baker, Jr.	410/3

Primary Examiner—David A. Bucci
Assistant Examiner—Stephen Gordon
Attorney, Agent, or Firm—M. Paul Hendrickson

[57] ABSTRACT

The present invention provides a coupling device which, when mounted to a transport, serves to catch and immobilize a moving vehicle equipped with a coupling unit. The coupling device may be mounted onto a snowmobile trailer and includes a coupling system which effectively couples onto a snowmobile ski eyelet when the ski enters a coupling zone. The device includes appropriate mounts for mounting the device to the snowmobile trailer bed and a ski impacting plate which, when struck by the ski, causes a coupling pin retainer to move sufficiently to release the coupling pin. The released coupling pin couples to the eyelet and stops the snowmobile from further movement.

11 Claims, 5 Drawing Sheets



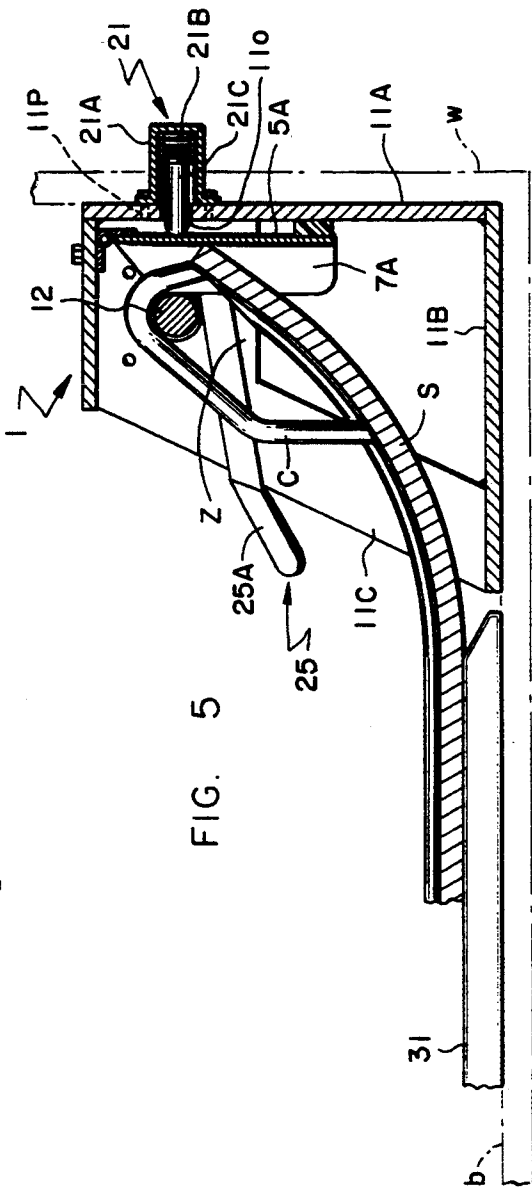
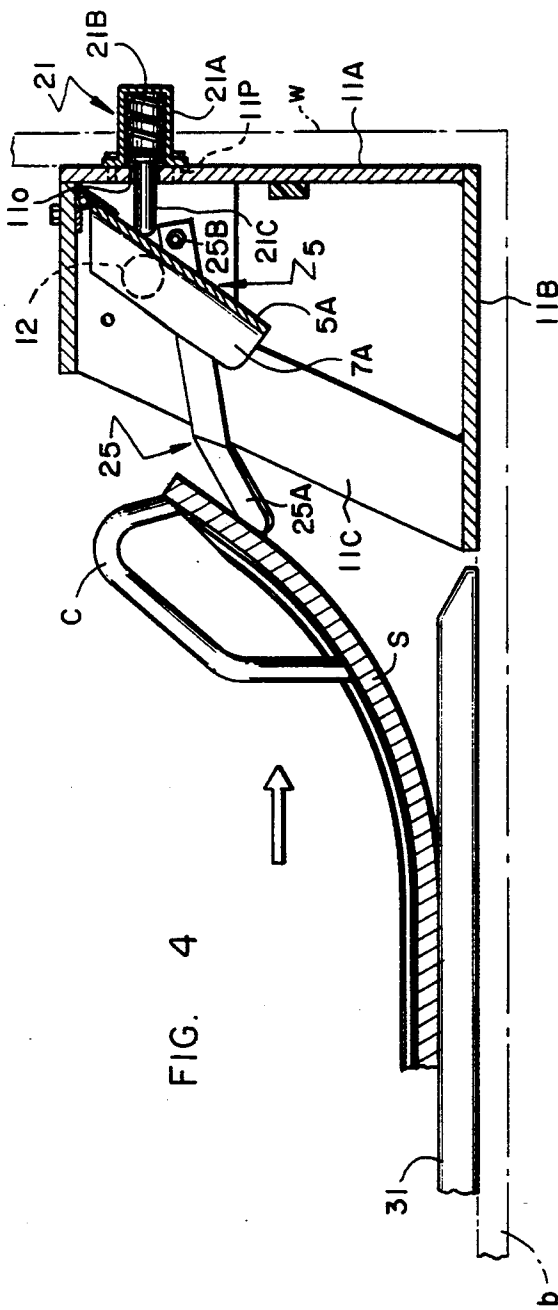


FIG. 7

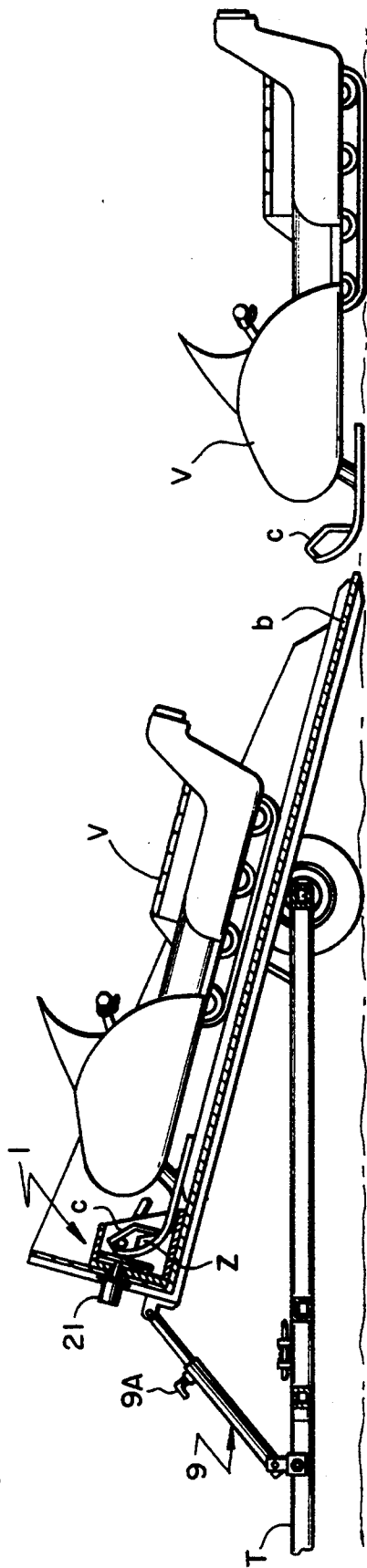


FIG. 6

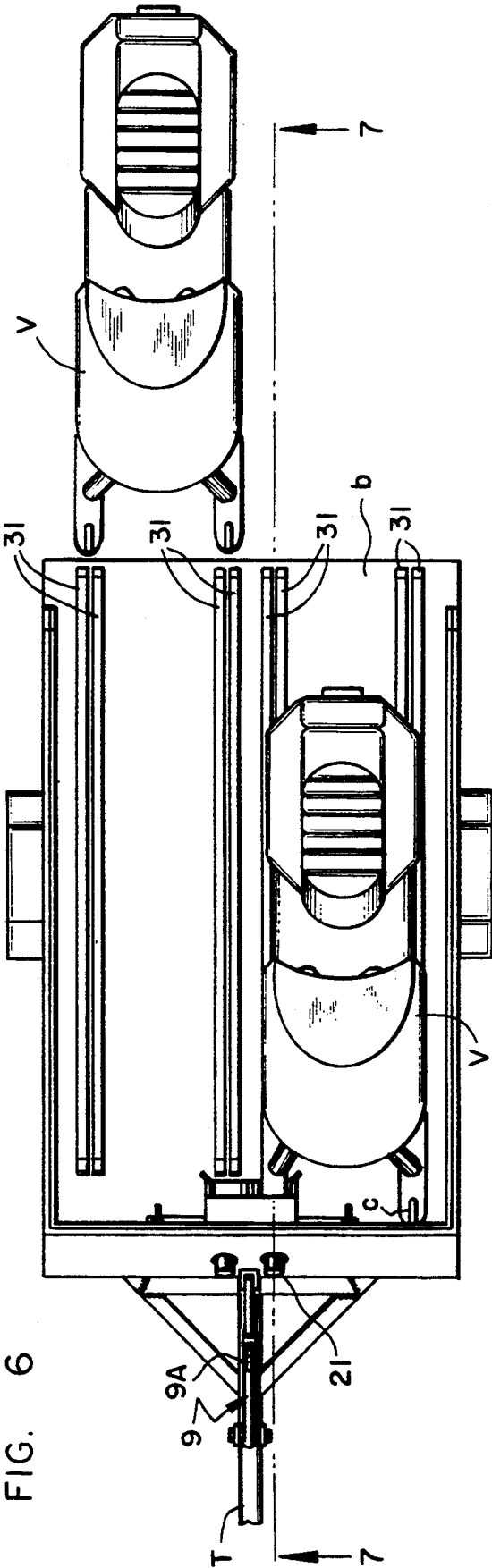


FIG. 8

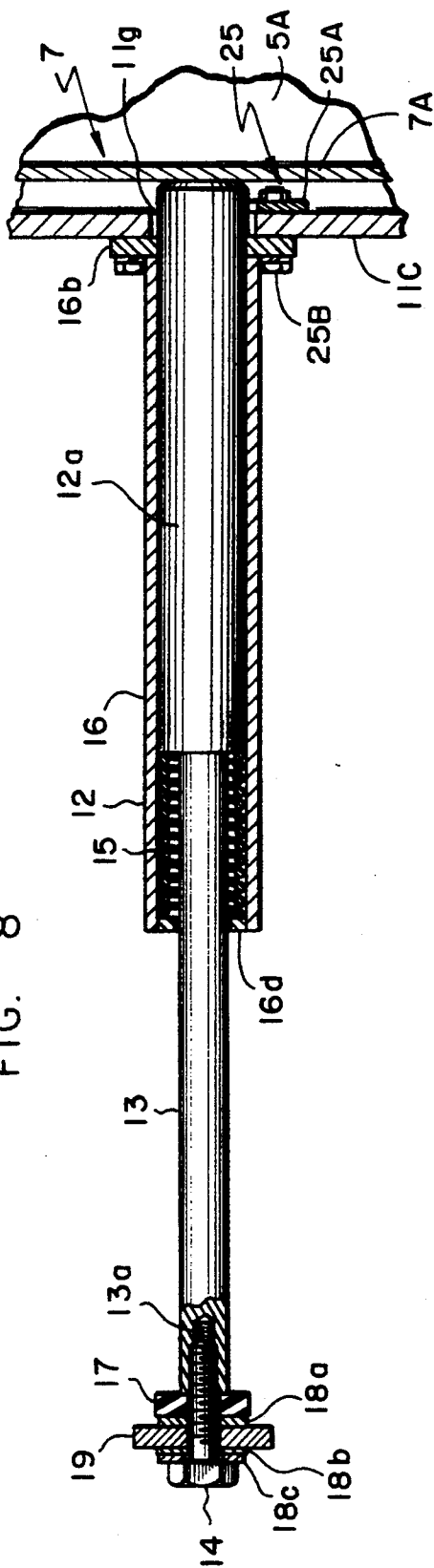
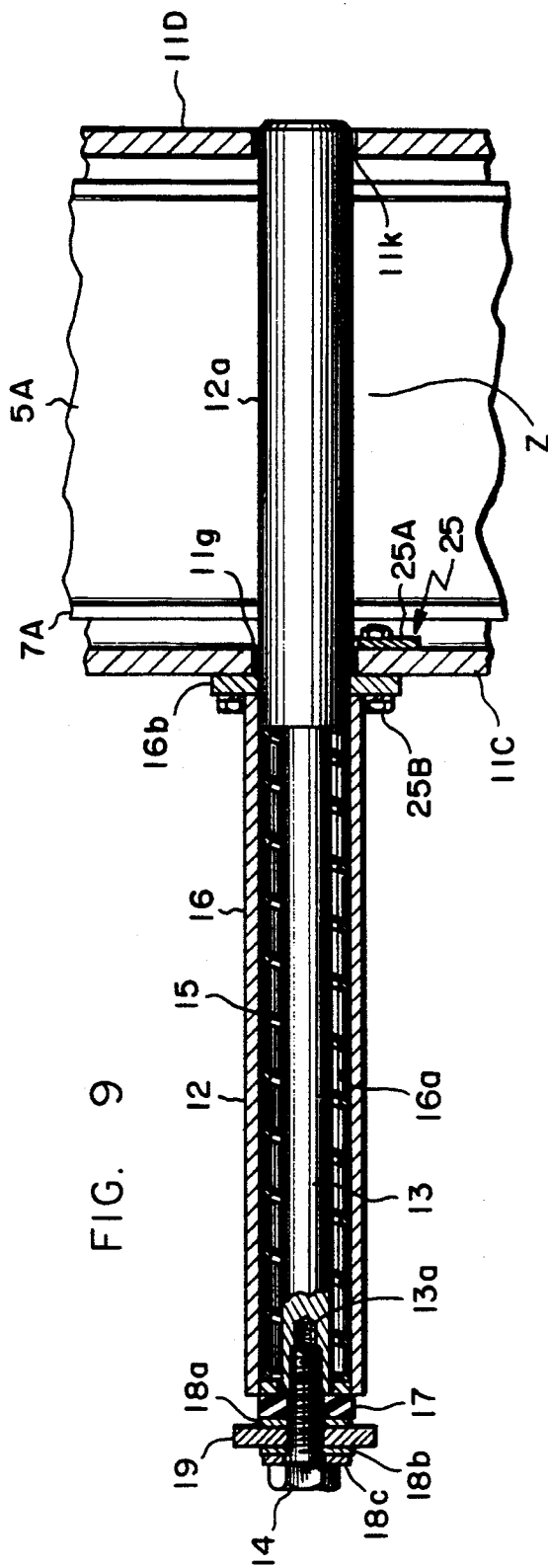
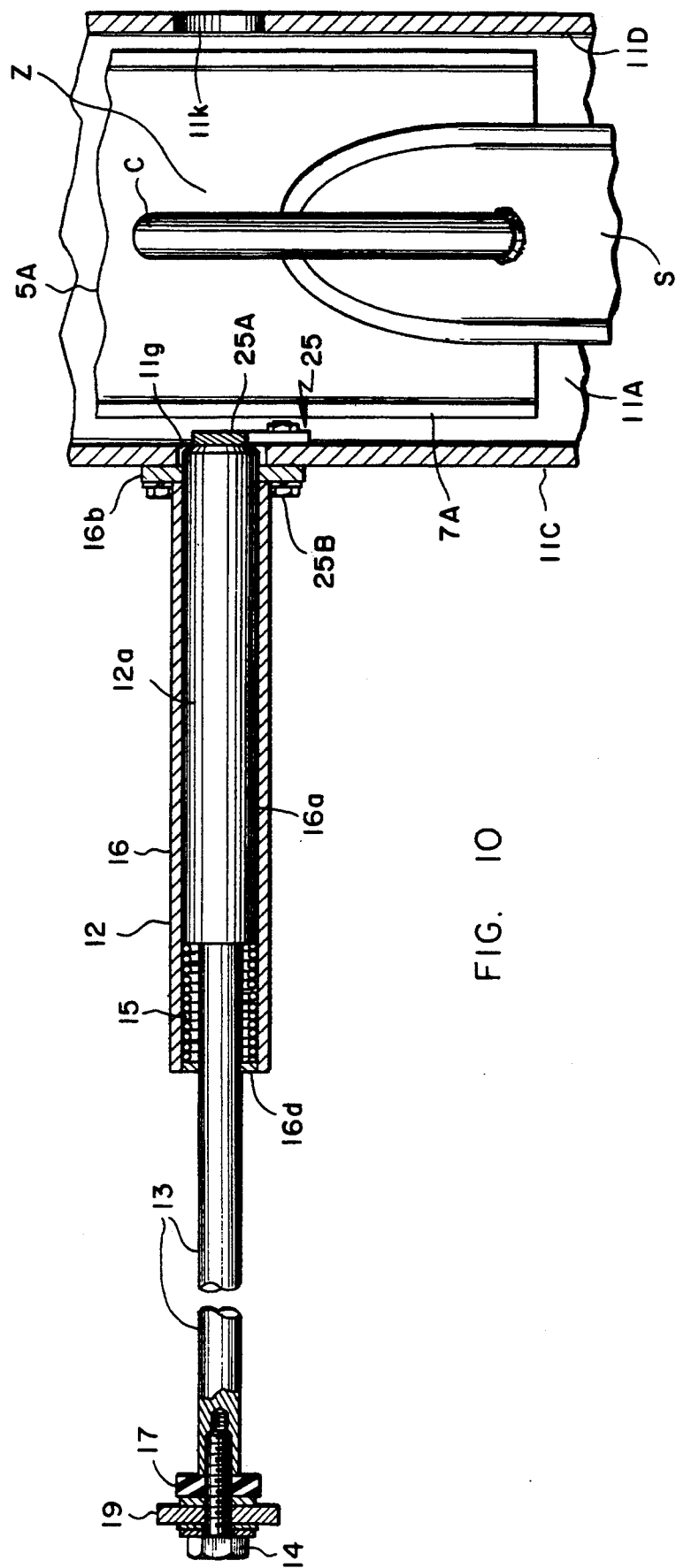


FIG. 9





COUPLING SYSTEM FOR MOTORIZED VEHICLES

FIELD OF THE INVENTION

The present invention relates to a coupling device and its use and more particularly a device for coupling and securing a motored vehicle onto a vehicular transport and the method for using the same.

Background of the Invention

It is conventional to transport to a work or recreational site motored vehicles such as all terrain vehicles, garden tractors and mowers, golf carts, snowmobiles, etc., upon a vehicular transport such as trucks fitted with beds, trailers, carriages, and the like. The current practice is typified by the transporting of snowmobiles upon trailers to and from a snowmobiling recreational site. Although the transport of snowmobiles has been popular for several decades, little, if any, advances have been made in the manner snowmobiles are loaded and secured onto the transporting vehicle.

The most common procedure for loading a snowmobile onto a transporting trailer involves driving the snowmobile onto the trailer, stopping the snowmobile and then latching or securing a snowmobile onto the transport. Transporting trailers are often equipped with ramps which permit the snowmobile to be ramped onto the trailer bed without inclining or declining the bed. Frequently, the trailer beds are pivotally mounted so that the bed serves as a ramp. The pivotally mounted trailers are typically weighted so as to remain at an inclined ramping position until counter-balanced by the snowmobile weight which pivotally returns the bed to a horizontal position. With trailers equipped to haul two or more snowmobiles, the bed must be placed onto a horizontal position after each snowmobile loading in order to secure the snowmobile thereto, with this sequence being necessarily repeated for each snowmobile which is loaded onto the trailer. Irrespective of whether the trailer bed is inclined or ramped for loading the snowmobile thereupon, the snowmobile and bed are thus typically placed or returned to a horizontal position in order to secure the snowmobile thereto.

Serious injury and damage to persons and property have arisen in accidents occurring during the loading and unloading of snowmobiles onto trailers or other transporting vehicles. Snowmobiles have overshot the loading bed causing serious injury and damage to both the person and property. Injury and damage often arises by sliding backwards or sideways off an icy or slippery trailer which tends to arise after the power has been reduced or stopped during the loading operation. Such injury and damage could be substantially curtailed if it were possible to latch and immobilize the snowmobile while the snowmobile remains under motorized power.

SUMMARY OF THE INVENTION

The present invention provides a device for safely immobilizing and securing a moving mobile unit (e.g. such as a snowmobile) onto a vehicular transport such as a trailer. The device, when properly anchored, may be appropriately used for coupling and immobilizing a motored vehicle (equipped with a coupling unit or as frequently referred to as a "catch") onto a vehicular transport. The coupling and immobilizing device, in general, comprises:

- a) means for positionally anchoring the device onto the vehicular transport within a coupling zone;
- b) means for detecting an entry of the motored vehicle within the coupling zone; and

5 c) means for releasing and coupling a coupling member onto the coupling unit in response to the entry of the motored vehicle onto said coupling zone, and thereby immobilizing the motored vehicle within said coupling zone.

10 The device may appropriately include a latching mechanism activated by impacting of the motored vehicle (e.g. such as a snowmobile) upon a detecting unit. The detecting unit may be a pivotally mounted plate which in the case of snowmobiles serves a means for detecting the entry of a snowmobile ski tip within the coupling or latching zone. Impacting of the ski tip upon the impacting plate initiates sufficient pivotal movement of retaining plate to release a coupling plunger retained thereby.

20 The device is securely mounted or anchored onto the vehicular transport at a position such that the impacting of the moving snowmobile ski tip upon the detecting unit causes the plunger retaining plate to release the coupling plunger which, in turn, latches onto a coupling unit or catch, such as an eyelet, securely affixed onto the moving snowmobile ski tip. The eyelet in combination with the plunger securely immobilizes the snowmobile onto the anchored device.

30 The present device provides a safe method for latching and securing a moving snowmobile onto a vehicular transport. The device may be used by simply ramping the trailer to an appropriate inclined position so as to permit one or more snowmobiles to be driven onto the vehicular transport in such a manner so that the ski tip impacts upon an impacting plate which triggers the release of a latching pin which latches onto the eyelet catch of the ski and thereby instantly immobilizes the snowmobile from any further movement thereupon. Once the snowmobile is immobilized by the latching pin, the operator of the snowmobile stops the motor of the latched snowmobile. The latched snowmobile may, thus, be immobilized against any backward movement upon the ramped trailer. If the snowmobile trailer is equipped for the ramping and loading of two or more snowmobiles thereupon, there is, accordingly, no need during the loading operation to unramp and reramp the trailer since the device securely latches and immobilizes each snowmobile impacting and caught by the device while the vehicular bed remains in the ramping or inclined position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of the coupling and immobilizing device of this invention attached to a front wall portion and a bed portion of a vehicular transport.

FIG. 2 is a frontal view of the device shown in FIG. 1.

FIG. 3 is a top view of the device shown in FIG. 1. FIG. 4 is a cross-sectional view taken along line 4—4 of FIG. 2 and shows a snowmobile ski tip approaching the coupling and immobilizing device of FIG. 1.

FIG. 5 is a cross-sectional view depicting an eyelet of a snowmobile tip coupled and immobilized by the device of FIG. 1.

FIG. 6 is a top view of a snowmobile trailer equipped with the coupling and latching device of FIG. 1.

FIG. 7 is a cross-sectional view taken along line 7—7 of FIG. 6.

FIG. 8 is a partial cross-sectional view taken along line 8—8 of FIG. 1 which shows in greater detail an unlatched coupling member shown in FIG. 3.

FIG. 9 is a cross-sectional view depicting the coupling member of FIG. 8 in a coupling position.

FIG. 10 is another cross-sectional view depicting restraining stop of the device shown in FIG. 1.

DETAILED DESCRIPTION OF THE DRAWING

With reference to the Figures, there is provided pursuant to the present invention a device (generally referenced as 1) for coupling or latching and immobilizing a motored vehicle V equipped with a catch or coupling unit C onto a vehicular transport (T) within a coupling or latching zone Z, said device comprising:

- a) means for positionally anchoring the device (generally enumerated as 3) onto the vehicular transport T within the coupling zone Z;
- b) means for detecting (generally enumerated as 5) an entry of the motored vehicle V within the coupling zone Z;
- c) means for releasing (generally referenced by 7) and a coupling member (generally referenced as 12) for coupling onto the catch C in response to the entry of the motored vehicle V within said coupling zone Z; and thereby immobilizing said motored vehicle V within said coupling zone Z with said device 1.

The device 1 catches and immobilizes a moving motored vehicle V (e.g. such as a snowmobile) as illustrated in FIGS. 5-7. The tips of most snowmobile skis S are equipped with an eyelet C (normally used for securing a tow) which effectively serves as the catch C or coupling unit C for coupling or latching a coupling plunger 12a onto the eyelets C of snowmobile ski S. The device 1 is most appropriately used in conjunction with a trailer T equipped with means for retaining (generally referenced as 9) the trailer bed (b) in an inclined ramping position while loading the snowmobiles V onto trailer T as depicted in FIG. 7.

The depicted device 1 includes a supportive frame 11 equipped with means for positionally anchoring (3) the device 1 onto an inner front sidewall (w) and bed (b) of transport T. The depicted frame 11 includes a rear frame section 11A and base frame section 11B equipped with means for bolting 3 the device so as to snugly fit onto the angular juncture of front sidewall (w) and bed (b). Anchoring of supportive frame 11 onto front sidewall w and bed b provides a suitable coupling zone Z or zones Z for immobilizing one or more motored vehicles V onto a transport T.

The depicted trailer T of FIG. 6 is designed to transport two snowmobiles V in a side-by-side relationship, and shows a center mounting of device 1 upon front sidewall w so as to provide dual coupling zones Z for coupling two snowmobiles V onto the anchored device 1.

The depicted device T is suitably adapted for coupling two snowmobiles V onto snowmobile trailer T in a side by side relationship and comprises two coupling units of device 1, both of which are equipped with same working components. The dual units of device 1 are, in essence, a mirror image of one another with the depicted left sided unit 1 showing a snowmobile V already loaded and latched onto trailer T while the depicted right side unit 1 is shown as being in an activated position for latching and immobilizing a yet to be loaded snowmobile upon the right side of transport T. The depicted device 1, accordingly, includes dual coupling

zones Z which are open for receiving and latching onto the ski eyelets C of snowmobile V as illustrated in FIGS. 5-9. The coupling zone Z depicted on the left hand side of FIGS. 2-4 is shown in an unlatched position and ready to receive and latch onto catch C. The left coupling zone Z is bordered by left outside angular plate 11C and left inside angular plate 11D which, in combination with base plate 11B and rear plate 11A, define an accessing opening for ski S to enter the left hand coupling zone 2. The right hand coupling zone Z, as depicted in FIGS. 2 and 3, is correspondingly bordered by right outside angular plate 11E and right inside angular plate 11F with rear frame sections 11A and base frame 11B completing the accessing opening for receiving and immobilizing ski eyelets C of snowmobile within right coupling zone Z.

The depicted device 1 includes at least one coupling member (generally designated as 12) for coupling or latching onto the snowmobile ski eyelet C. The depicted coupling members 12 (two shown) respectively include a plunger head 12a fitted with a plunger rod 13 tapped with tap 13a to receive fastener (screw) 14. Biasing spring 15 circumscribes plunger rod 13 and normally biases the plunger head 12a to a latching position (as illustrated by the right device 1 depiction of FIGS. 2, 3 and 9) unless restrained from entry onto coupling zone Z or unlatching position as shown in FIGS. 2 and 3 or the left unit 1 latching position depiction of FIGS. 5 and 8 or when retained for unloading position as shown in FIG. 10. Plunger rod 13, spring 15 and plunger head 12a are reciprocally housed within the barrel chamber 16a of housing 16. Housing 11 includes at one end a mounting plate 11b for mounting the coupling members 12 onto outside angular plates 11C and 11E as depicted in FIGS. 2 and 3. As illustrated by the cross-sectional views (4 and 5; 8-10) of left mounted device 1, plunger head 12a is restrained in the withdrawn position about plunger apertures 11g (e.g. see FIGS. 8 and 10) when unlatched and bridges between plunger aperture 11g and latching aperture 11k when released to the latching position as illustrated by FIGS. 2, 3 and 9.

The opposite end of housing 16 includes a plunger stop 16d with an apertured bore sized to slideably receive rod 13 and stop plunger head 12a when plunger head 12a and compression spring 15 are withdrawn onto stop 11d. Rubber washer 17, washer 18a, handle 19, washer 18b and lock washer 18c are secured to tap 13a of plunger rod 13 with screw 14 so as to provide a handled plunger head 12a which may be more easily withdrawn from the coupling zone 2 and set in the unlatched position as partially illustrated by FIGS. 2-4 and in 8-10.

In the latching position (as depicted in part by FIGS. 2, 3, 5, 7 and separately in FIG. 9), the plunger head 12a respectively bridges through and across the left outside angular plate 11C onto inside left angular plate 11D with plunger head 12a being firmly journaled within left outside plunger retaining aperture 11g and left inside plunger retaining aperture 11k. The right outside angular plate 11E and right inside angular plate 11F are similarly fitted with an outside plunger retaining aperture 11g and an inside plunger retaining aperture 11k for slideably receiving and retaining the corresponding plunger head of the right unit device 1.

The depicted device 1 includes detecting means (generally designated as 5) for detecting an entry of the motored vehicle V within coupling zone Z as well as

releasing means for releasing (generally designated as 7) and coupling the coupling member 12 onto the snowmobile ski eyelet C in mechanical response to detecting the entry of vehicle V to coupling zone 2. As illustrated in FIGS. 2-5 and 8, a pivotally mounted striker plate 5A fitted with flanged sidewalls 7A respectively serve to detect and release plunger head 12a to the latching or coupling position. When snowmobile ski S strikes striker plate 5A and pivotally moves the striker plate 5A sufficiently forward to cause flanged sidewalls 7A to clear outside plunger retaining aperture 11g so as to allow plunger head 12a to plunge through coupling zone Z and catch C onto plunger retaining aperture 11k and thereby firmly latch and immobilize a snowmobile ski eyelet C therewithin as illustrated by FIGS. 5, 7 and 9.

Each coupling device 1 of the illustrated combination includes a striker plate biasing assembly (generally referenced as 21) for applying a biasing force onto striker plate 5A to force flanged sidewalls 7A to block passage of the plunger head 12a in a restraining position as shown by the broken line 1 of FIG. 1 and by the cross-sectional view of FIG. 4 and also by FIGS. 2, 3 and 8. With particular reference to FIGS. 4 and 5, the rear plate 11A includes a striker plate plunger opening 11o and biasing assembly mounting apertures 11P for mounting striker plate biasing assembly 21 onto the back side of rear plate 11A. The striker biasing assembly 21 includes housing 21A which houses biasing spring 21B and ram 21C. Spring 21B biases ram 21C firmly against striker plate 5A and forced inwardly the flanged sidewalls 7A to retain plunger heads 12a in the unlatched or restrained position illustrated by the broken lines depiction of FIG. 1 and 4.

The cross-sectional view and broken lines of FIG. 4 depicts a ski S approaching the coupling zone Z with ram 21C being shown as biasing striker plate 5A outwardly sufficiently to allow flanged sidewalls 7A to restrain plunger head 12a in the unlatched position. When snowmobile ski S impacts against striker plate 5A with sufficient force to depress ram 21C into housing 21A, the pivotal movement of flanged sidewalls 7A provides sufficient clearance of the plunger head 12a therefrom to allow the plunger head 12a to be released therefrom with sufficient force and velocity to rapidly couple onto and immobilize the snowmobile eyelet C onto anchored device 1.

The cross-sectional view of FIG. 5 shows the pivotally mounted striker plate 5A depressed against rear frame 1A, biasing spring 22B fully compressed and ram withdrawn within housing 21A and ski eyelet C cleared from restraining flange 7A which allows plunger head 12a to firmly secure eyelet C onto device 1. When it is desired to reset the coupling member 12 to a readied position for latching, coupling member 112 is withdrawn from the coupling zone Z sufficiently to allow the striker plate biasing assembly 21 to bias striker plate 5A and the restraining flange plate 7A to restrain plunger head 12a in an unlatched position as depicted by FIGS. 4 and 8.

FIGS. 8 and 9 respectively depict enlarged cross-sectional views of the left coupling member 12 in an unlatching position (non-coupling) for loading and in the latched or coupled position. In FIG. 8, retaining flange 7A retains plunger head 12a and compression spring 15 in a fully compressed and biasing state. Conversely, FIG. 9 depicts restraining flange plate 7A sufficiently removed from aperture 11g and plunger head 12a so as

to provide clearance for plunger head 12a and thereby allow compression spring 15 to propel plunger head 12a through the latching zone Z and journal onto the apertured opening 11k of left inside frame 11D which secures and immobilizes ski eyelet C to device 1.

In order to unload the snowmobile V from transport T, there is a need for stopping means to temporarily restrain coupling member 12 in the unlatched position. An unloading plunger restraining stop (generally referenced by 25) serves as restraining stop to temporarily restrain the coupling member 12 in an unlatched position. Plunger restraining unit 25 holds plunger head 12a in the unlatched position and thereby facilitates the unloading of a previously latched snowmobile V from the transport T. As illustrated in greater detail in FIG. 5, the snowmobile ski S of a loaded snowmobile forces flanged retaining plate 7A from the latching zone Z so that plunger head 12a is released to the latching position. In the loaded position, the flanged retaining plate 7A cannot be effectively used to hold plunger head 12a from the latching zone Z. The unloading restraining unit 25, accordingly, temporarily serves to restrain plunger head 12a from latching zone Z so that the unlatched snowmobile V may then be effectively unloaded from transport T.

The unloading restraining unit 25 includes a pivotally mounted lever 25A which, when appropriately moved to a restraining position as illustrated in FIG. 10, restrains coupling member 12 (namely head 12a) and permits the temporarily unlatched snowmobile V to be unloaded from transport T. Restraining levers 25A may be pivotally mounted onto the inner walls of the outside angular frames (11C and 11E) by a bolt and nut fastener 25B or other suitable mounts as may be observed by reference to FIGS. 5 and 10. As illustrated in FIG. 10, restraining lever 25A may be positioned so as to rest substantially flush onto the inner wall of angular plate 11C (or 11E) so as to effectively restrain plunger head 12a from penetrating coupling zone 2. Restraining lever 25A and fastener 25B are also positioned sufficiently flush onto plate 11c so as to provide sufficient clearance to allow for impacting plate 5a and restraining flange 7A to move and pivot freely to a latching position and unlatching position.

A pair of ring washers (not shown) placed between frame 11C and lever 25A and the other washer between fastener nut 25B and lever 25A may be used to facilitate the pivotal movement of lever 25A about fastener bolt 25B. Tension upon the movement of lever 25A may be regulated by fastener 25B. Lever 25A is also appropriately configured so it obstructs passage of plunger head 12a through the latching zone Z when placed in the unloading restraining position (up) as illustrated in FIG. 10. Except for its use to restrain plunger head 12a in an unlatched position during unloading, lever 25A is normally positioned in the non-restraining position (shown as placed downwardly) as illustrated in the FIGS. 1-5 and 8. Thus, when "cocking" device 1 for snowmobile V impacting and coupling during loading (e.g. see FIG. 4) and while transporting the snowmobile V in a latched position as depicted in FIG. 5, lever 25A will be placed in the non-restraining position as depicted by FIGS. 1-9.

The bed (b) preferably includes a pair of polyethylene running guides 31 for each snowmobile ski S which serve as a guide for the snowmobile operator and runner for driving snowmobiles V onto trailer T. Illustratively, the polyethylene guides 31 may measure about

1.5 inches high and 1 inch wide and firmly secured or anchored onto trailer bed (b). The polyethylene guides 31 possess a sufficiently low co-efficient of friction to effectively reduce resistance when loading the snowmobile V onto bed (b). The snowmobile operator merely aligns a ski S onto the appropriate guide 31 and drives the snowmobile V onto impacting plate 5A which causes retaining plate 7A to release plunger head 12a and secure eyelet C onto the anchored device 1.

A major advantage of the coupling and immobilizing device 1 of this invention is illustrated by FIG. 7 which shows the pivotally mounted bed b positioned in an inclined or ramping position with one snowmobile V being already securely latched to the transport T while the second snowmobile V is ready for directly loading onto the ramped transport T. As may be observed (e.g. see FIGS. 6 and 7) the transporting trailer T includes means (generally referenced as 9) for maintaining the trailer bed b in an inclined position. The depicted transport T includes a telescoping brace 9 equipped with set bolt 9A which when secured in a bracing position as shown in FIG. 7 maintains the trailer bed b in ramped position for loading and for coupling both snowmobiles V onto transport T. Unlike conventional snowmobile loading systems which generally require the bed b to be placed at a horizontal position in order to secure each snowmobile V to bed b, the trailer bed b with the immobilizing device 1 of this invention may be maintained in a ramped or inclined position while loading and securing both snowmobiles to the latching device 1. The releasing and latching mechanism of the device 1 is quick, safe and reliable. The anchored device 1 will quickly stop and immobilize a moving snowmobile onto trailer T even while the snowmobile V remains under power. Once latched thereto, the snowmobile V remains immobilized against any backward movement upon the ramped bed 1. The device 1 provides a quick and easy system for immobilizing one or more snowmobiles S to trailer T. Injury and damage to person and property can be substantially reduced by use of the device 1.

What is claimed:

1. A coupling device adapted for use in catching and immobilizing a moving motored vehicle equipped with a coupling unit to a vehicular transport equipped with a bed adjusted to an inclined ramping position for driving the vehicle onto the bed by coupling the coupling unit to said device, the device comprising:

- a) anchoring means for firmly anchoring said coupling device at a fixed position onto said bed at a coupling position for coupling to the coupling unit;
- b) a housing defining a coupling zone for receiving and stopping the coupling unit of the moving vehicle;
- c) coupling means for coupling the coupling unit of the vehicle to the device;
- d) detecting means for detecting the moving vehicle within the coupling zone;
- e) releasing means for releasing and immobilizing the vehicle within the coupling zone by coupling the coupling means to the coupling unit in response to said detecting means detecting the moving vehicle within said coupling zone wherein the coupling means comprises a first plate, a coupling pin slidably mounted to the first plate and actuated by said releasing means to move said pin from an unreleased position to a released position, and a second plate for receiving and securely retaining the cou-

pling pin upon release of said pin by said releasing means, the coupling pin not residing in or being retained by the second plate when the pin is in said unreleased position; and

- f) an unloading restraining unit for mechanically restraining the coupling means in an uncoupled position so as to permit unloading of an uncoupled vehicle from the bed.

2. The coupling device according to claim 1 wherein the coupling device comprises a snowmobile coupling device wherein said anchoring means is adapted for rigidly anchoring the device to the bed of a snowmobile trailer at the coupling position so as to permit immobilization of a moving snowmobile having as the coupling unit an eyelet affixed to a forward section of a snowmobile ski, the housing being for receiving and stopping the eyelet within the coupling zone, and the coupling pin of the coupling means is of a structural configuration and strength for coupling onto and retaining the eyelet within the coupling zone.

3. The coupling device according to claim 2 wherein the detecting means comprises a pivotally mounted impacting plate, the housing includes a rear stop plate which serves as a stop for the impacting plate and the forward section of the snowmobile ski, and the anchoring means is adapted for anchoring the device upon the bed of the snowmobile trailer so as to permit the forward section of the snowmobile ski to impact against the plate upon entry of the eyelet within the coupling zone.

4. The device according to claim 3 wherein the releasing means comprises a spring for propelling the coupling pin to the released position when released by said releasing means and a retaining section integrally connected to the impacting plate, with the retaining section serving to retain the coupling pin in said unreleased position until activated by the snowmobile ski striking against the impacting plate which causes the impacting plate and retaining section to concurrently pivot and release the coupling pin to the released position.

5. The device according to claim 1 wherein the coupling pin comprises a spring activated plunger for coupling to an eyelet of a snowmobile ski, with said plunger being retained in an uncoupling position by said releasing means and wherein the releasing means includes a spring for propelling the plunger through the eyelet and securing the plunger onto the second plate upon release of the plunger by said releasing means.

6. A vehicular transport adapted for use in catching and immobilizing a moving motored vehicle equipped with a coupling catch by coupling to the catch within a coupling zone, said transport comprising:

- A) a bedded transport equipped with a bed adjustable to an inclined ramping position and accessing means for accessing the moving motored vehicle onto the bed when the bed is adjusted to the ramping position; and
- B) a coupling device firmly anchored at a fixed position to the bed, with said device comprising:
 - a) coupling detecting means for detecting the moving vehicle within the coupling zone;
 - b) a coupling housing for receiving and stopping the coupling catch within the coupling zone;
 - c) coupling means for coupling the coupling catch of the moving vehicle to the device; and
 - d) releasing means for releasing and coupling the coupling means to the catch in response to the

detecting means detecting the moving vehicle within said coupling zone wherein the coupling means comprises a first plate, a coupling pin slidably mounted to the first plate and actuated by said releasing means to move said pin from an unreleased position to a released position, and a second plate for receiving and securely retaining the coupling pin upon release of said pin by said releasing means, the coupling pin not residing in or being retained by the second plate when the pin is in said unreleased position.

7. The transport according to claim 6 wherein the transport comprises a snowmobile trailer equipped to transport at least one snowmobile upon the bed, the coupling device comprises a snowmobile coupling device wherein the coupling housing includes a snowmobile ski housing section for receiving and stopping a snowmobile ski of a moving snowmobile fitted with a ski tip eyelet which serves as the catch for catching and immobilizing said moving snowmobile by said coupling means within said coupling zone.

8. The trailer according to claim 7 wherein the detecting means comprises a pivotally mounted impacting

plate positioned upon the trailer such that it is capable of being responsive to impacting of a said ski against the impacting plate.

9. The snowmobile trailer according to claim 8 wherein the trailer includes a pivotally mounted bed including multiple coupling zones and equipped to receive multiple snowmobiles, bracing means for maintaining the bed in the ramping position while providing the snowmobiles access to the multiple coupling zones and a plurality of coupling devices positionally mounted to the trailer so as to permit the multiple snowmobiles to be coupled to said coupling devices while maintaining said bed in the ramping position.

10. The snowmobile trailer according to claim 9 wherein the trailer is equipped with running guides which serve as guides for an operator during loading of snowmobiles to the coupling zones.

11. The snowmobile trailer according to claim 10 wherein the running guides comprise elevated plastic strips of a sufficiently low coefficient of friction to permit tracking of snowmobile skis of said snowmobiles thereupon.

* * * * *

25

30

35

40

45

50

55

60

65